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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,721	09/26/2003	Robert H. Wollenberg	T-6074	9409

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/672,721

Applicant(s)

WOLLENBERG ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-39 and 44-62 is/are allowed.
- 6) ☒ Claim(s) 40-43 and 63-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections except those described below are overcome by applicants' amendment filed 4/20/06.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 40-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 recites "predominantly straight chain alkyl group". The scope of the claim is confusing because it is not clear what is meant by "predominantly" or what types of straight chain alkyl groups are considered "predominantly" straight chain.

It is noted that the above rejection was previously set forth in paragraph 3(e) of the office action mailed 3/24/06 with respect to each of claims 40-43.

In response, in the amendment filed 4/20/06, applicants deleted "predominantly" from each of claims 41-43. However, no such amendment was made to claim 40. Thus, it is the examiner's position that the scope of claim 40 remains confusing for the reasons set forth above and therefore, the above rejection remains against present claim 40.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 63-66 are rejected under 35 U.S.C. 102(b) as being anticipated by Kwabe et al. (U.S. 6,187,972).

The rejection is adequately set forth in paragraph 5 of the office action mailed 3/24/06 and is incorporated here by reference.

Response to Arguments

6. Applicants' arguments filed 4/20/06 have been fully considered but they are not persuasive.

Specifically, applicants argue that Kwabe et al. do not disclose or teach the process of present claims 63-66 given that Kwabe et al. disclose process for producing alkylene glycol and not process of in situ delivery of equimolar quantities of alkylene glycol and carbon dioxide to a reaction mixture wherein the reaction mixture requires the presence of the alkylene glycol and carbon dioxide as reactants as presently claimed.

However, it is noted that Kwabe et al. disclose process wherein a reaction solution comprising alkylene carbonate is hydrolyzed at 50-200 °C to form alkylene glycol and carbon dioxide (col.4, lines 10-30). Thus, the hydrolysis of the alkylene carbonate results in the in situ delivery of equimolar amounts of alkylene glycol and carbon dioxide to the reaction solution and thus, the alkylene glycol and carbon dioxide are present in the reaction solution as reactants. It is

this portion of the process of Kwabe et al. that meets the requirements of the present claims.

While it is noted that the ultimate product of the process of Kwabe et al. is alkylene glycol, the above described portion of this process of Kwabe et al. does meet the requirements of present claims 63-66.

Applicants argue that there is no disclosure in Kwabe et al. of how the alkylene glycol could be used, i.e. as reactant in a reaction mixture. However, there is no requirement in the claims that the alkylene glycol is actually used as reactant or actually reacts, only that the alkylene glycol is present in the reaction solution as a reactant. That is, the present claims are drawn to in situ delivery of alkylene glycol and carbon dioxide to a reaction mixture not the reaction of the alkylene glycol and carbon dioxide after such delivery.

Thus, given that Kwabe et al. disclose process comprising delivering alkylene carbonate to reaction solution in the presence of water wherein the alkylene carbonate hydrolyzes to produce alkylene glycol and carbon dioxide, i.e. delivery of equimolar amounts of alkylene glycol and carbon dioxide to the reaction solution, which then become part of the reaction solution, i.e. as reactants, it is the examiner's position that Kwabe et al. meet the requirements of present claims 63-66.

Allowable Subject Matter

7. Claims 1-39 and 44-62 are allowable over the "closets" prior art for the following reasons.

It is noted that in the office action mailed 3/24/06, present claims 1-39 and 44-62 were rejected only under 35 USC 112, second paragraph, i.e. no prior art rejections of record were

applied against these claims. While the "closest" prior art was cited in paragraph 6 of the office action, for reasons set forth in this paragraph, such prior art was not applied against present claims 1-39 and 44-62.

Thus, given that applicants' amendment filed 4/20/06 overcomes the outstanding 35 USC 112, rejections of record, present claims 1-39 and 44-62 are allowable over the cited "closest" prior art for the reasons set forth in paragraph 6 of the office action mailed 3/24/06 which are re-stated below.

Chang et al. (U.S. 4,865,754) discloses overbased sulfurized alkylphenol with color less than 3.5, however, there is no disclosure of TBN as required in present claim 61. Further, there is no disclosure of process for preparing the overbased sulfurized alkylphenol comprising the use of ethylene carbonate as required in present claims 1, 11, and 21.

GB 2197336 disclose method of preparing Group II metal overbased sulfurized alkylphenol comprising reacting higher alkyl group substituted phenol, oil-soluble Group II metal overbased hydrocarbyl sulfate, higher alkanol, a Group II metal oxide, hydroxide, or alkoxide, sulfur, alkylene glycol, carbon dioxide, and catalyst. However, there is no disclosure or suggestion of the use of ethylene carbonate as required in present claims 1, 11, and 21. Rather, GB 2197336 utilizes combination of ethylene glycol and carbon dioxide. Further, there is no disclosure in GB 2197336 of detergent-dispersant additive comprising the Group II metal overbased sulfurized alkylphenol that possesses color of 3.5 or lower and increased hydrolytic stability as required in present claim 61.

Erdman et al. (U.S. 4,927,551) disclose method of preparing Group II metal overbased sulfurized alkylphenol comprising reacting sulfurized alkyl phenol, alkanol comprising at least 8

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carbons, Group II metal oxide, hydroxide, or alkoxide, C₂-C₄ alkylene glycol, and carbon dioxide. However, there is no disclosure or suggestion of the use of ethylene carbonate as required in present claims 1, 11, and 21. Rather, Erdman et al. utilizes combination of ethylene glycol and carbon dioxide. Further, there is no disclosure in Erdman et al. of detergent-dispersant additive comprising the Group II metal overbased sulfurized alkylphenol that possesses color of 3.5 or lower and increased hydrolytic stability as required in present claim 61.

It is further noted that rejections of claims 56-62 drawn to product are not envisioned over GB 2197336 or Erdman et al. in light of the comparative data set forth in the present specification. Specifically, tables III and IV compare Group II metal overbased sulfurized alkylphenol within the scope of the present claims, i.e. prepared using ethylene carbonate, with Group II metal overbased sulfurized alkylphenol outside the scope of the present claims but within the scope of the prior art, i.e. prepared using ethylene glycol and carbon dioxide. It is shown that the presently claimed Group II metal overbased sulfurized alkylphenol is superior in terms of hydrolytic stability and color.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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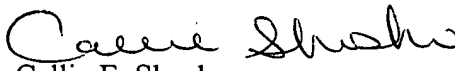
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CS
2/18/07


Callie E. Shosho
Primary Examiner
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